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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,718	05/02/2006	Mohan M. Vijay	9-16791-1US	3704

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EXAMINER
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GANEY, STEVEN J

ART UNIT	PAPER NUMBER
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3752

MAIL DATE	DELIVERY MODE
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12/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,718	<b>Applicant(s)</b> VIJAY ET AL.	
	<b>Examiner</b> STEVEN J. GANEY	<b>Art Unit</b> 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-35 is/are allowed.
- 6) ☒ Claim(s) 1-10, 13, 14, 17-29 and 36-48 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 15, 16 and 30-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/6/08</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 40 is rejected under 35 U.S.C. 102(b) as being anticipated by Kiyono et al.

Kiyono et al discloses an apparatus for water jet cutting comprising a nozzle 2; a power source for generating an electrical pulse 10; and a transducer 5, see col. 4, lines 29-43. The apparatus is capable of performing the method steps as claimed.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10, 13, 17-27 and 36-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henshaw in view of Kiyono et al.

Henshaw discloses a waterjet apparatus comprising high pressure water hose, see Figure 6; a handheld gun 60; rotating nozzles 20/62 and mobile apparatus 72, except for the nozzles being ultrasonic nozzles having a transducer. Kiyono et al, as discussed above, discloses an

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ultrasonic nozzle with a transducer used in a waterjet apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Henshaw with an ultrasonic nozzle, as taught by Kiyono et al, since Henshaw discloses that any type of cavitating nozzle can be used in the apparatus, see col. 6, lines 28-31, and the ultrasonic nozzle of Kiyono et al would perform equally as well in the apparatus of Henshaw.

As to claims 2 and 3, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the materials as claimed, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

As to claims 4 and 5, the type of transducer would be a matter of obvious design choice, since any type of transducer would perform equally as well in the apparatus of Henshaw, as modified by Kiyono et al.

As to claim 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to sheath the hose with a nylon sleeve as claimed, since the device is used in extreme conditions and would warrant protection.

As to claims 40-48, the apparatus of Henshaw, as modified by, is capable of performing the method steps as claimed.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henshaw in view of Kiyono et al as applied to claim 1 above, and further in view of Heinz.

Henshaw, as modified by Kiyono et al, discloses all the featured elements of the instant invention, except for a compressed air hose for cooling the transducer. Heinz discloses a

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piezoelectric transducer that is cooled by compressed air fed by a compressed air hose. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a compressed air hose for feeding compressed air to cool the transducer in the apparatus of Henshaw, as modified by Kiyono et al, since Heinz teaches cooling a piezoelectric transducer with compressed air prevents overheating of the piezoelectric transducer. This would be beneficial for the apparatus of Henshaw, as modified by Kiyono et al, since such device operate for extending periods of time in hostile work environments.

6. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henshaw in view of Kiyono et al as applied to claims 1 and 27 above, and further in view of Inoue.

Henshaw, as modified by Kiyono et al, discloses all the featured elements of the instant invention, except for the transducer being a stepped cylinder and being made of a titanium alloy. Inoue discloses a stepped cylinder transducer 33/38 made of a titanium alloy for use in ultrasonic cleaning, see Figure 3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a stepped cylinder transducer in the apparatus of Henshaw, as modified by Kiyono et al, as taught by Inoue, wherein so doing would amount to the mere substitution of one functional equivalent transducer for another within the same art and the selection of any of these transducers would work equally well in the Henshaw, as modified by Kiyono et al, device.

***Allowable Subject Matter***

7. Claims 33-35 are allowed.

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8. Claims 11, 12, 15, 16 and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baker, III et al, Hall, Conn et al and Petermann show various types of water jet/cleaning apparatuses.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN J. GANEY whose telephone number is (571)272-4899.

The examiner can normally be reached on 9:00-5:00; Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven J. Ganey/  
Primary Examiner  
Art Unit 3752

sjg